



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/576,258

04/18/2006

Akinori Masamura

127740

8892

25944 7590 01/05/2010

OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

TIETJEN, MARINA ANNETTE

ART UNIT

PAPER NUMBER

3753

MAIL DATE

DELIVERY MODE

01/05/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,258	Applicant(s) MASAMURA ET AL.	
	Examiner MARINA TIETJEN	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is responsive to the amendment filed on 09/18/2009. As directed by the amendment: claim 1 has been amended. Thus, claims 1-11 are presently pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection. The newly added limitation "the main body including a lower plane surface for being in contact with the valve seat, a side surface vertically extending from an outer periphery of the lower plane surface, a hole opening on an upper surface in which the actuator is fitted, and a slope portion connecting an upper end of the side surface and an outer periphery of the upper surface" was not previously considered and requires a new grounds of rejection. Since the new grounds of rejection were necessitated by Applicant's amendment, the instant Office action has been made final.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3753

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 8, the limitation "an upper surface of the main body inclines downward in a direction away from the urging member" in lines 1-2, is indefinite because it is unclear if this is referring to the slope portion in claim 1 or another slope portion different than the one recited in claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 3753

8. Claims 1, 4, 7-11 are rejected, as far as they are definite, under 35 U.S.C. 103(a) as being unpatentable over Kimura (JP 09-217845) in view of Kimura (JP 11-37329).

Kimura discloses a diaphragm valve (fig. 1) comprising:

a body (1) having an upper opening (in which diaphragm 21 seals);

a first flow passage (3) and a second flow passage (2) formed in the body (1) to open into the upper opening;

a diaphragm valve element (21) covering the upper opening to form an airtight space through which the first and second flow passages (3, 2) are allowed to communicate with each other;

a valve seat (5) formed in the body (1);

an urging member (14) urging the diaphragm valve element (21) against the valve seat (5) into a valve-closed state; and

an actuator (11, 12, 20 in combination with air pressure through 15) adapted to bring the diaphragm valve element (21) out of contact with the valve seat (5) into a valve-opened state;

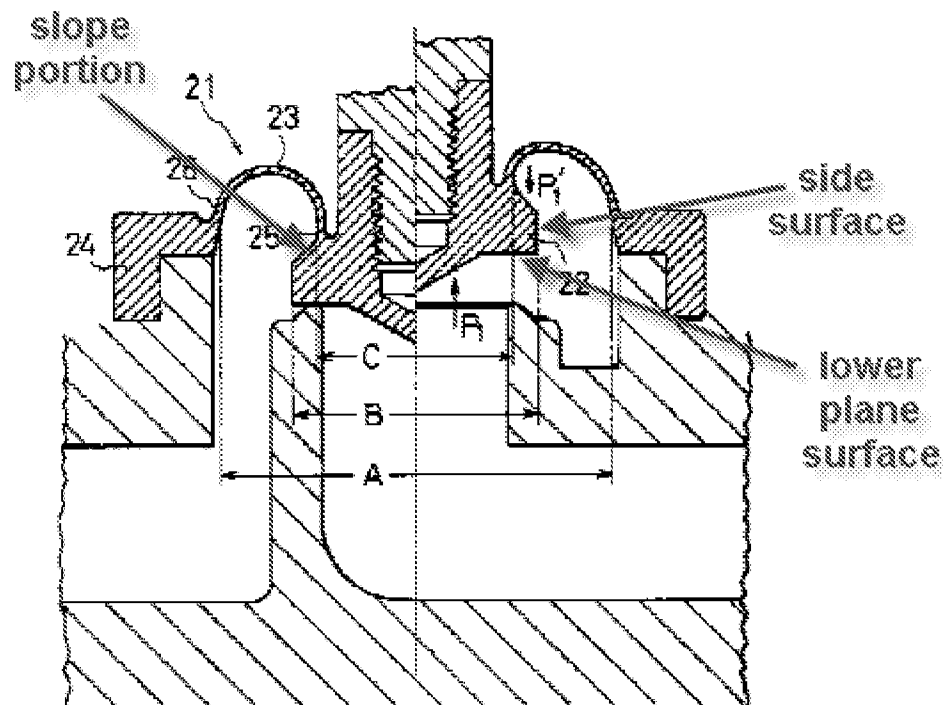
wherein the diaphragm valve element (21) is made of resin (see title of attached JP 09-217845 reference), and the diaphragm valve element (21) comprises:

a main body (22) which is to be brought into/out of contact with the valve seat (5), the main body (22) including a lower plane surface (see labeled fig. 2 below) for being in contact with the valve seat (5), a side surface (see labeled fig. 2 below) vertically extending from an outer periphery of the lower plane surface (labeled fig. 2 below), a hole opening (threaded hole in which 12 fits) on an upper

Art Unit: 3753

surface in which the actuator (11, 12, 20) is fitted, and a slope portion (see labeled fig. 2 below) connecting an upper end of the side surface and an outer periphery of the upper surface;

【圖 2】




a diaphragm part (23) formed extending in a curve, radially from the slope portion of the main body (22), and including a root (25) connected to the main body (1), a radially outer portion of the root (25) being positioned inside the diameter of the valve seat (C is shown as outer dimension of root which is located slightly inside of seat 5 as shown in fig. 2) so that liquid pressure acts on a region outside the root connected to an upper surface of the main body for reducing an urging force of the urging member, the diaphragm valve being capable of reducing an occurrence of water hammer; and

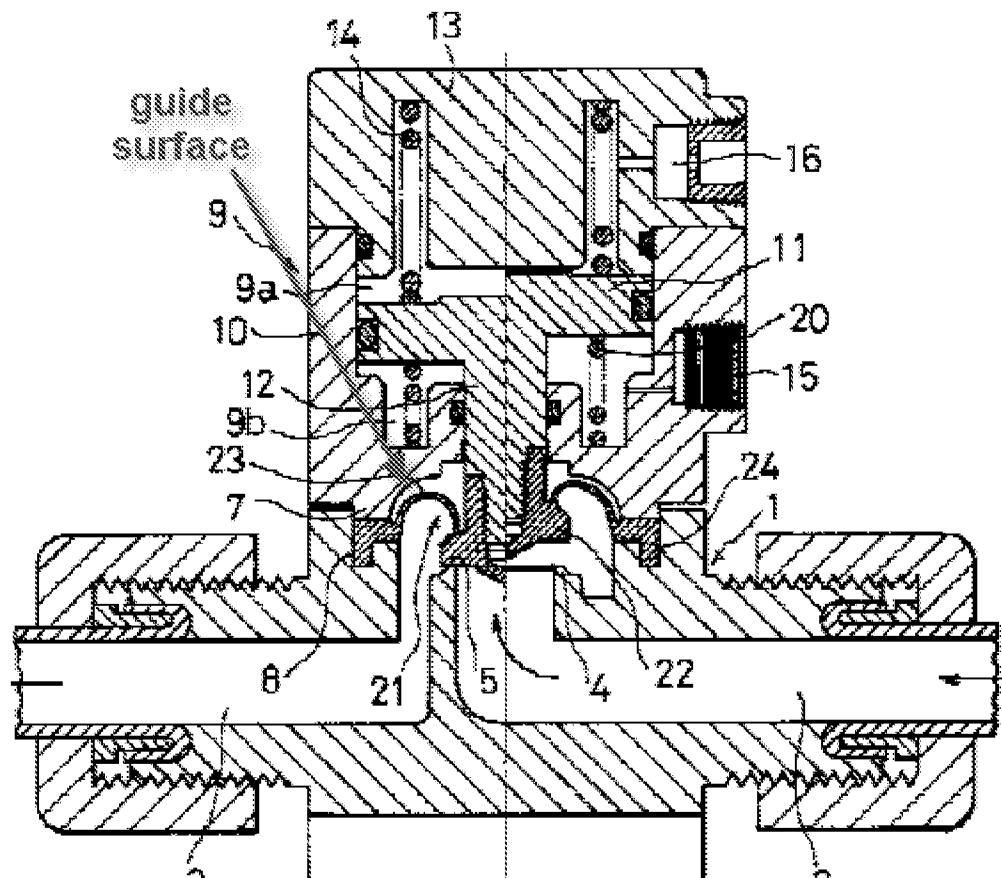
Art Unit: 3753

a fixed part (24) formed at an outer peripheral edge of the diaphragm part (23);

wherein the diaphragm part (23) has a thin wall (26) and the fixed part has a thick wall (24) and the fixed part is held between a lower fixing face (8) and an upper fixing face (7);

further comprising a guide face (see labeled fig. 1 below) having a slope contiguous from the upper fixing face above the diaphragm part (23) so that the diaphragm part (23) comes into contact with the guide face when the diaphragm valve element (21) is separated from the valve seat (5);

【 1】



wherein a fluid-pressure-receiving area of the main body (22) is as large as or larger than a fluid-pressure-applied area of the diaphragm part (23);

wherein the root (25) substantially vertically extends upward from the main body (22);

wherein the upper surface of the main body (22) inclines downward in a direction away from the urging member (14);

further comprising a circular groove (groove formed around outside of seat 5) formed around the valve seat (5); and

wherein the first flow passage (3) is in communication with the circular groove formed around the valve seat (5).

However, Kimura does not disclose the fixed part is held at a position higher than the root during the valve-closed state or the valve-open state.

Kimura ('329) teaches a diaphragm valve wherein the fixed part (the upper portion of 6c) is held at a position higher than the root (6b', fig. 2) during the valve-closed state and the valve-open state for the purpose of providing an alternate equivalent arrangement of a retaining a fixed part of a diaphragm.

It would have been obvious to one having ordinary skill at the time the invention was made to modify Kimura ('845) such that the fixed part is held at a position higher than the root during the valve-closed state or the valve-open state, as taught by Kimura ('329), for the purpose of providing an alternate equivalent arrangement of a retaining a fixed part of a diaphragm. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kimura ('845) such that the fixed part is held at a position higher than the root during the valve-closed state and the valve-open state, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

9. Claim 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (JP 09-217845) in view of Kimura (JP 11-37329) further in view of Browne et al. (U.S. Pat. No. 6,394,417).

Art Unit: 3753

Kimura ('845) in view of Kimura ('329) disclose the invention as essentially claimed, except for wherein the thin wall and the thick wall are formed so that respective upper surfaces are flush with each other, and wherein the upper fixing face extends to the diaphragm part.

Browne et al. teaches wherein the thin wall (36) and the thick wall (28) are formed so that respective upper surfaces are flush with each other, and wherein the upper fixing face (28) extends to the diaphragm part (36) for the purpose of providing an alternate equivalent diaphragm construction and an alternate equivalent means of retaining the fixed part in the housing in a manner known in the art which yields predictable results.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Kimura's valve such that the thin wall and the thick wall are formed so that respective upper surfaces are flush with each other, and wherein the upper fixing face extends to the diaphragm part, as taught by Browne et al., for the purpose of providing an alternate equivalent diaphragm construction and an alternate equivalent means of retaining the fixed part in the housing in a manner known in the art which yields predictable results.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 3753

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARINA TIETJEN whose telephone number is (571) 270-5422. The examiner can normally be reached on Mon-Thurs, 9:30AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBIN EVANS can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T./
Examiner, Art Unit 3753

/John K. Fristoe Jr./
Primary Examiner, Art Unit 3753